

## CLAIMS

- 1 1. A method comprising  
2 based on a metric that represents a value of a game of  
3 chance, optimizing a payout distribution with respect to the metric.
- 1 2. The method of claim 1 in which the metric represents a  
2 quality of a player experience.
- 1 3. The method of claim 1 in which the metric evaluates  
2 payouts for successive plays of the game.
- 1 4. The method of claim 1 in which the metric evaluates a  
2 quality of experience for average players who receive more  
3 frequent payouts.
- 1 5. The method of claim 1 in which the metric evaluates a  
2 fraction of players experiencing payouts in a succession of plays.
- 1 6. The method of claim 1 in which the metric is chosen based  
2 on characteristics of particular player populations.
- 1 7. The method of claim 6 in which the characteristic  
2 comprises at least one of location of game played, time of day  
3 played, amounts put at risk, and identity of games played.
- 1 8. The method of claim 1 in which the payout distribution  
2 comprises a number of the payout levels.

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- 1 9. The method of claim 1 in which the payout distribution  
2 comprises a frequency of payouts.
- 1 10. The method of claim 1 in which the payout distribution  
2 comprises levels of payouts.
- 1 11. The method of claim 1 in which the optimizing includes  
2 simulating a number of players.
- 1 12. The method of claim 11 also including applying different  
2 termination rules for respective groups of the players, each of the  
3 termination rules defining when play of each of the players in the  
4 group will terminate.
- 1 13. The method of claim 12 in which at least one of the  
2 termination rules provides for termination when a player has  
3 reached a predefined number of plays.
- 1 14. The method of claim 12 in which at least one of the  
2 termination rules provides for termination when a player has  
3 experienced a predefined number of plays with no payouts.
- 1 15. The method of claim 12 in which the metric comprises the  
2 aggregate payout among all of the players.
- 1 16. The method of claim 11 in which the metric comprises the  
2 aggregate number of plays of all of the players.

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- 1 17. The method of claim 11 in which the number of players is  
2 based on the frequency of payouts.
- 1 18. The method of claim 11 in which the number of players is  
2 based on a specified accuracy to be achieved in the optimizing.
- 1 19. The method of claim 1 in which the optimizing includes  
2 generating simulations of player experiences.
- 1 20. The method of claim 19 in which each of the simulations of  
2 player experiences is terminated after a number of plays.
- 1 21. The method of claim 20 in which the number of plays is  
2 based on the occurrence of a sequence of plays without payouts.
- 1 22. The method of claim 20 in which the number of plays is  
2 based on the occurrence of a length of time elapsed during play.
- 1 23. The method of claim 20 in which the number of plays is  
2 based on the depletion of an initial budget.
- 1 24. The method of claim 19 in which the optimizing applies a  
2 genetic algorithm to the player experiences.
- 1 25. The method of claim 1 in which the optimizing is based on  
2 predefined constraints.
- 1 26. The method of claim 25 in which the constraints are  
2 associated with amounts of house hold.

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- 1 27. A medium bearing instructions capable of enabling a
- 2 machine to optimize a payout distribution for a game of chance
- 3 with respect to a metric that represents a value of the game

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